Claims

[c1]   1. A method of selecting a physiological data manipulation process, the method comprising the acts of:

receiving raw data including an asynchronous component having diagnostic information and including a synchronous component;

separating the asynchronous component from the synchronous component; and

selecting a data manipulation process based on the diagnostic information.

[c2]   2. A method as set forth in claim 1, wherein the act of selecting of a data manipulation process includes classifying an abnormality condition of the diagnostic information.

[c3]   3. A method as set forth in claim 2, wherein the act of classifying the abnormality condition includes the act of analyzing at least a one of a rhythm, an atrio-ventricular conduction, a ventricular rate, a P wave amplitude, a QT interval and an age qualifier from the diagnostic information.

[c4]   4. A method as set forth in claim 1, wherein the data manipulation process comprises a lossy process and a lossless process, and wherein the method further comprises the act of processing the raw data using a one of the lossy process and the lossless process.

[c5]   5. A method as set forth in claim 4, wherein the lossy process includes the acts of low-pass filtering of the asynchronous components of the raw data to produce filtered data, down-sampling the filtered data to produce down-sampled data, re-quantization of the down-sampled data, comparing the down-sampled data to produce compared data, polarity reversal encoding of the compared data to produce polarity reverse encoded data, and Huffman encoding of the polarity reverse encoded data to produce lossily compressed data.

[c6]   6. A method as set forth in claim 4, wherein the lossless process includes the acts of comparing the synchronous component of the raw data to produce compared data and Huffman encoding of the compared data to produce losslessly compressed data.

[c7]   7. A method as set forth in claim 1, wherein the act of separating the asynchronous

component from the synchronous component includes generating a data condition of the diagnostic information.

[c8]   8. A method of processing physiological data, the method comprising:
receiving raw data including an asynchronous component having diagnostic information and including a synchronous component;
separating the asynchronous component from the synchronous component;
selecting a data manipulation process based on the diagnostic information; and
processing the asynchronous component and the synchronous component using the data manipulation process selected.

[c9]   9. A method as set forth in claim 8, wherein the act of selecting of a data manipulation process includes classifying an abnormality condition of the diagnostic information.

[c10]   10. A method as set forth in claim 9, wherein the act of classifying the abnormality condition includes the act of analyzing at least a one of a rhythm, an atrio-ventricular conduction, a ventricular rate, a P wave amplitude, a QT interval and an age qualifier from the diagnostic information.

[c11]   11. A method as set forth in claim 8, wherein the data manipulation process comprises a lossy process and a lossless process, and wherein the method further comprises the act of processing the raw data using a one of the lossy process and the lossless process.

[c12]   12. A method as set forth in claim 11, wherein the lossy process includes the acts of low-pass filtering of the asynchronous components of the raw data to produce filtered data, down-sampling the filtered data to produce down-sampled data, re-quantization of the down-sampled data, comparing the down-sampled data to produce compared data, polarity reversal encoding of the compared data to produce polarity reverse encoded data, and Huffman encoding of the polarity reverse encoded data to produce lossily compressed data.

[c13]   13. A method as set forth in claim 11, wherein the lossless process includes the acts of comparing the synchronous component of the raw data *to produce* compared data and Huffman encoding of the compared data to produce losslessly

compressed data.

[c14]   14. A method as set forth in claim 8, wherein the act of separating the asynchronous component from the synchronous component includes generating a data condition of the diagnostic information.

[c15]   15. A medical device comprising:
a patient data acquisition device that collects physiological data including an asynchronous component having diagnostic information and a synchronous component; and
a software program for selecting a method of processing the physiological data, the software program including a signal separation module that receives the data from the data collection and separates the asynchronous component from the synchronous component; a selector module that selects a data manipulation process selection based on the diagnostic information.

[c16]   16. A medical device as set forth in claim 15, wherein the signal separation module further comprises:
a classifier module to classify an abnormality condition of the diagnostic information.

[c17]   17. A medical device as set forth in claim 16, wherein the classifier module further comprises:
an analysis module to analyze at least a one of a rhythm, an atrio-ventricular conduction, a ventricular rate, a P wave amplitude, a QT interval and an age qualifier from the diagnostic information.

[c18]   18. A medical device as set forth in claim 15, wherein the data manipulation process is a lossy process that low-pass filters, down-samples, re-quantizes, compares, polarity reversal encodes and Huffman encodes the data.

[c19]   19. A medical device as set forth in claim 15, wherein the data manipulation process is a lossless process that compares and Huffman encodes the data.

[c20]
20. A medical device as set forth in claim 15, wherein the selector *module* further comprises: